CHAPTER 1
ADMINISTRATION

101.1 Title

~~This document~~ These regulations shall be known as the "~~Uniform~~ City of Houston Plumbing Code," may be cited as such, and will be referred to herein as "this code." The Construction Code of the City of Houston, Texas, collectively includes this volume and certain other codes, pamphlets, specifications, and documents that are adopted in or by reference through the Adopting Ordinance, which appears in the preamble of the volume entitled "City of Houston Building Code."

101.4.1.4 ~~Conflicts between codes.~~ ~~When the requirements within the jurisdiction of this plumbing code conflict with the requirements of the mechanical code, this code shall prevail.~~ **Conflicting provisions.** Where in any specific case, different provisions of the *City Code*, the *City of Houston Building Code*, the *City of Houston Electrical Code*, the *City of Houston Mechanical Code*, the *City of Houston Fire Code*, and this Code specify different materials, methods of construction, or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall be applicable.

101.4.1.5 *International Residential Code*. Plumbing for detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories high with separate means of egress and their accessory structures shall comply with the *2000 International Residential Code for One- and Two-Family Dwellings* as adopted by the State of Texas in Subchapter G of Chapter 214 of the Texas Local Government Code and amended by this jurisdiction. Plumbing for residential occupancies to which the *International Residential Code* does not apply shall be governed by this Code.

101.4.1.6 Energy. *The 2000 International Energy Conservation Code* has been adopted by the State of Texas pursuant to Chapter 388 of *the Texas Health and Safety Code*. *The 2000 International Energy Conservation Code* and any amendments adopted as authorized by state law shall be enforced by this jurisdiction in accordance state law.

101.4.3 The provisions in the appendices are intended to supplement the requirements of this Code and shall not be considered part of this Code unless formally adopted as such.

Appendices A, B, C, G, H, I, J, and L as amended by this jurisdiction, are hereby adopted and shall be incorporated into and made a part of this Code.

101.4.4 Exempt Installations. The provisions of this Code shall not apply to gas service mains from the street main to the meter, nor to the installation of gas meters by the utility organization supplying gas, nor to gas piping installations of the utility organization made on their own or public premises and part of the

general gas supply and distribution for this jurisdiction and surrounding communities, nor to the installation of public sewers and public water distribution systems by this jurisdiction, its contractors, agents and employees.

101.4.5 Homeowners. Subject to compliance with the Plumbing License Law, nothing in this Code shall prevent any homeowner from installing and maintaining plumbing in a building owned and occupied by him as his homestead and done in compliance with the requirements of all applicable state adopted codes and ordinances of this jurisdiction. Such privilege does not grant the right to violate any of the provisions of this Code or state adopted codes, nor is it to be construed as exempting any such property owner from obtaining a permit and paying the required fees therefor, except for work that is exempt from permitting under this Code.

101.4.6 Basic principles. The general requirements of this Code are enunciated as necessary principles to proper basic environmental sanitation through properly designed, acceptably installed, and adequately maintained plumbing systems. The following principles shall serve to define the intent:

Principle No. 1. All premises intended for human habitation, occupancy, or use shall be provided with a supply of potable water neither connected with unsafe water supplies nor subject to the hazards of backflow, backsiphonage or back pressure due to dormant or inert periods.

Principle No. 2. Every building having plumbing fixtures installed and intended for human habitation, occupancy, or use and located on premises abutting on a street, alley, or easement in which there is a public sewer shall have a separate connection with such sewer. Where two or more buildings are located on one lot fronting 75 feet (22.9 m) or less on such street, alley, or easement and the lot is under one ownership, one sewer connection to the public main may be used for all buildings located thereon. On industrial tracts, apartment projects, or like installations under one ownership where the sanitary sewers within the tract are maintained and operated by one owner, separate connections shall be made to the privately owned and maintained sewer, but only one connection need be made to the public sewer.

Principle No. 3. Each dwelling unit shall have not less than one water closet, one bathtub or shower, one lavatory, and one kitchen-type sink. Adequate 120°F (48°C) hot water shall be provided to the tub or shower, lavatory, and kitchen sink.

All other structures for human occupancy or use on premises located within 300 feet (91.4 m) of a public sewer, or having a private sewage-disposal system, shall have adequate sanitary sewer facilities but in no case less than one water closet and one fixture for cleansing purposes.

Principle No. 4. Plumbing fixtures shall be made of smooth, nonabsorbent material, shall be free from concealed fouling surface, and shall be located in ventilated enclosures.

Principle No. 5. Each fixture directly connected to the drainage system shall be equipped with a water-seal trap.

Principle No. 6. No substance that will clog the pipes, produce explosive mixtures, destroy the pipes or their joints or that will interfere unduly with the sewage disposal process shall be allowed to enter the building drainage system.

Principle No. 7. Proper protection shall be provided to prevent contamination of food, water, sterile goods, and similar materials by backflow of sewage. When necessary, the fixture, device, or appliance shall be connected indirectly with the building drainage system.

Principle No. 8. No water closet shall be located in a room or compartment that is not properly lighted and ventilated.

Principle No. 9. If water closets or other plumbing fixtures are installed in buildings located on premises where there is no public sewer available as determined by the provisions of all applicable ordinances, suitable provisions shall be made for disposing of the building sewage by a method of sewage treatment and disposal approved by the director of Public Works and Engineering. On-site sewage disposal systems shall additionally comply with Chapter 366, Texas Health and Safety Code.

Principle No. 10. Where a plumbing drainage system may be subject to backflow of sewage, suitable provisions shall be made to prevent its overflow in the building.

Principle No. 11. Plumbing shall be installed with due regard to preservation of the strength of structural members and prevention of damage to walls and other surfaces through fixture usage.

Principle No. 12. Sewage or other waste from a plumbing system that may be deleterious to surface or subsurface waters shall not be discharged into the ground or into any waterway unless it has first been rendered innocuous through subjection to a form of treatment that is approved by the Administrative Authority and that meets the standards established by law.

102.2.3 Stop Orders. Whenever any work is being done contrary to the provisions of this Code, the Administrative Authority may order the work stopped by notice in writing served on any persons engaged in the doing or causing such work to be done, and any such persons shall forthwith stop work until authorized by the Administrative Authority to proceed with the work.

At the time such stop order is issued, the person doing the work and the permit holder shall be given notice of a right to a hearing on the matter pursuant to Section 102.4 of this Code. On request, such a hearing shall be held within three business days unless the permit holder or the person doing the work requests an extension of time. Any stop order that has been issued shall remain in effect pending any hearing requested on the matter unless the stop order is withdrawn by the Administrative Authority.

102.2.6 Liability. ~~The Administrative Authority charged with the enforcement of this Code, acting in good faith and without malice in the discharge of the Administrative Authority's duties, shall not thereby be rendered personally liable for any damage that may accrue to persons or property as a result of any act or~~

~~by reason of any act or omission in the discharge of duties. A suit brought against the Administrative Authority or employee because of such act or omission performed in the enforcement of any provision of this Code shall be defended by legal counsel provided by the jurisdiction until final termination of such proceedings.~~ Except as otherwise provided by law, the Administrative Authority shall not personally be liable in damages for any act or omission arising out of any official action taken to implement and enforce the provisions of this Code. Additionally, except as otherwise provided by law, the Administrative Authority shall not be personally liable in damages for any action or omission taken in the course and scope of employment. Where and to the extent consistent with the provisions of Article X of Chapter 2 of the City Code, this jurisdiction shall provide legal representation and indemnification for any suit brought against the Administrative Authority because of acts or omissions performed in the enforcement of this Code.

102.3.2 Penalties. ~~Any person, firm, or corporation violating any provision of this Code shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be punishable by a fine and/ or imprisonment set forth by the governing laws of the jurisdiction. Each separate day or any portion thereof, during which any violation of this Code occurs or continues, shall be deemed to constitute separate offense~~. Where no specific penalty is otherwise provided in this Code, the violation of any provision of this Code shall constitute a misdemeanor punishable upon conviction by a fine of not less than $250.00 nor more than $2,000.00. Each day that any violation continues shall constitute and be punishable as a separate offense. Where any conduct in violation of this Code also constitutes a violation of state penal law, then the offense shall be punishable as provided in the applicable state law. In prosecutions under this Code, the various provisions hereof that are designated as an "exception" or "exceptions" shall not be treated as exceptions within the meaning of Section 2.02 of the Texas Penal Code, and instead, they shall constitute defenses to prosecution within the meaning of Section 2.03 of the Texas Penal Code.

102.4 Hearing Procedures

102.4.1 Hearing notices. Whenever notice is to be given to any person concerning the right to a hearing, the notice may be given by personal delivery or by certified mail, return receipt requested.

If notice is being given to a building owner or to a tenant therein, and the Administrative Authority is unable to determine the name or address of such person after checking the building and the applicable records of the Planning and Development Department, the County Appraisal District, the electrical utility company and the gas utility company, notice shall be mailed to the billing addresses of the building as shown on the records of the Water Division of the Public Works and Engineering Department and shall be posted on or in view of each entrance to the building. Additionally, if any notice is mailed to a building owner or a building tenant and is returned without delivery, notice shall be effective if posted on or in view of each entrance to the building.

102.4.2 Hearings. Except where otherwise specifically provided, all hearings held pursuant to this Code shall be conducted by the director of Planning and Development or a representative, who shall hereinafter be referred to as the hearing official. The director shall not designate any person to be a hearing official under this code who has taken any part in the investigation of the matter that is the subject of the hearing or any person who directly supervised the investigation. The hearing official shall consider only the evidence presented at the hearing in rendering a decision. The decision of the hearing official shall be set forth in writing and shall be served on each party in the same manner as a notice of a right to a hearing.

103.1.2.3 This section shall be construed in a manner that is consistent with the Plumbing License Law, and no provision herein shall be construed to exempt work for which a permit is required to be obtained from this jurisdiction under State law.

~~**103.1.3 Licensing.** *As a result of an agreement between the Department of Housing and Urban Development (HUD) and IAPMO the requirements for licensing have been removed from this section of the UPC. Provision for licensing shall be determined by the Administrative Authority.*~~

103.2.1 Application. Upon application by a state-licensed master plumber or by a property owner of a building owned and occupied by him as his homestead to install storm and sanitary sewers, plumbing fixtures, appurtenances and appliances for drainage, gas, water and/or sewer lines, or medical gas, water treatment and/or irrigation lines and appurtenances, or by drain layer's license holders to install storm sewers, if the conditions and requirements of this Code have been compiled with and if there are adequate facilities or arrangements have been made to provide service to such plumbing installations, the Administrative Authority shall issue a permit. No plumbing permit shall be issued until a building permit shall have first been issued where a building permit is required.

To obtain a permit, the applicant shall first file an application therefor in writing on a form furnished by the Administrative Authority for that purpose.

Every such application shall:

103.2.1.4 Be accompanied by plans, diagrams, computations and other data as required in Section 103.2.2, and by the applicable fees as provided in Section 117 of the City of Houston Building Code.

103.2.1.6 Give such other data and information as may reasonably be required by the Administrative Authority to determine that the application is in compliance with applicable laws.

103.3.4 Expiration. ~~Every permit issued by the Administrative Authority under the provisions of this Code shall expire by limitation and become null and void if the work authorized by such permit is not commenced within one hundred eighty (180) days from the date of such permit, or if the work authorized by such permit is suspended or abandoned at any time after the work is commenced for a period of one hundred eighty (180) days. Before such work can be recommenced, a new permit shall first be obtained to do so, and the fee therefor shall be one-half the amount required for a new permit for such work, provided no changes have been made or will be made in the original plans and specifications for such work, and provided further, that such suspensions or abandonment has not exceeded one year.~~

~~Any permittee holding an unexpired permit may apply for an extension of the time within which work may commence under that permit when the permittee is unable to commence work within the time required by this section for good and satisfactory reasons. The Administrative Authority may extend the time for action by the permittee for a period not exceeding one hundred eighty (180) days upon written request by the permittee showing that circumstances beyond the control of the permittee have prevented action from being taken. No permit shall be extended more than once. In order to renew action on a permit after expiration, the permittee shall pay a new full permit fee.~~ For purposes of this subsection, the determination whether work has commenced under a permit or whether work has been abandoned under a permit shall be based upon whether the permit holder requests an inspection of the work performed under the permit by the Administrative Authority. If work is not commenced under a permit within 180 days of the date of issuance or is abandoned at any time for a period of 180 consecutive days, the permit shall lapse. An elapsed permit shall expire 180 days following the date that it lapsed unless, before the 180th day following the date that the permit lapsed, the permit holder obtains reactivation of the permit by:

(1) Requesting reactivation of the permit by the Administrative Authority, and

(2) Requesting an inspection of work performed under the permit by the Administrative Authority.

A permit may only be reactivated one time, and it shall expire if the work is again abandoned for a period of 180 consecutive days. In order to recommence work under an expired permit, the permit holder shall pay the full permit fee applicable to the previously uninspected portion of the work.

Exception: The Administrative Authority may upon request perform a final inspection of work for which the permit has expired or reactivate a permit for the purpose of issuing a certificate of occupancy.

103.3.5 Suspension or Revocation. After notice and a hearing pursuant to Section 102.4, the Administrative Authority may, in writing, suspend or revoke a permit issued under the provisions of this Code whenever the permit is issued in error or on the basis of incorrect information supplied or in violation of other ordinance or regulation of this jurisdiction.

103.4.1 Permit Fees. ~~Fees shall be assessed in accordance with the provisions of this section and as set forth in the fee schedule Table 1-1. The fees are to be determined and adopted by this jurisdiction.~~ The fee for each permit shall be as set forth in Section 117 of the City of Houston Building Code.

103.4.3 Expiration of Plan Review. Applications for which no permit is issued within one hundred eighty (180) days following the date of application shall expire by limitation and plans and other data submitted for review may thereafter be returned to the applicant or destroyed by the Administrative Authority. The Administrative authority may ~~exceed~~ extend the time for action by the applicant for a period not to exceed one hundred eighty (180) days upon request by the applicant showing that circumstances beyond the control of the applicant have prevented action from being taken. No application shall be extended more than once. In order to renew action on an application after expiration, the applicant shall resubmit plans ~~and pay a new plan review fee~~.

103.4.5 Fee Refunds

103.4.5.1 The Administrative Authority may authorize the refunding of any fee paid hereunder which was erroneously paid or collected due to an error by one or more jurisdiction employees. This provision shall not be applicable if the error occurred due to incorrect information provided by the applicant.

103.4.5.2 The Administrative Authority may authorize the refunding of not more than ~~a percentage~~ ninety (90) percent of the amount in excess of $25.00 of the permit fee paid , ~~as determined by this jurisdiction~~ when no work has been done under a permit issued in accordance with this Code. If work has been done under the permit, no refund may be authorized.

103.4.5.3 ~~The Administrative Authority may authorize the refunding of not more than a percentage, as determined by this jurisdiction when no work has been done under a permit issued in accordance with this Code.~~

The Administrative Authority shall not authorize the refunding of any fee paid except upon written application filed by the original permittee not later than one hundred eighty (180) days after the date of fee payment.

103.5.6 Reinspections. A reinspection fee may be assessed for each inspection or reinspection when such portion of work for which inspection is called is not complete or when required corrections have not been made.

This provision is not to be interpreted as requiring reinspection fees the first time a job is rejected for failure to comply with the requirements of this Code, but as controlling the practice of calling for inspections before the job is ready for inspection or reinspection.

Reinspection fees may be assessed when the approved plans are not readily available to the inspector, for failure to provide access on the date for which the inspection is requested, or for deviating from plans requiring the approval of the Administrative Authority.

To obtain reinspection, the applicant shall file an application therefor in writing upon a form furnished for that purpose and pay the reinspection fee in accordance with Section 117 of the City of Houston Building Code. ~~Table 1-1.~~

~~In instances where reinspection fees have been assessed, no additional inspection of the work will be performed until the required fees have been paid.~~

TABLE 1-1

Plumbing Permit Fees

Permit Issuance

1. For issuing each permit ..... *
2. For issuing each supplemental permit ..... *

Unit Fee Schedule (in addition to items 1 and 2 above)

1. For each plumbing fixture on one trap or a set of fixtures on one trap (including water, drainage piping and backflow protection therefor) ..... *
2. For each building sewer and each trailer park sewer ..... *
3. Rainwater systems – per drain (inside building) ..... *
4. For each cesspool (where permitted) ..... *
5. For each private sewage disposal system ..... *
6. For each water heater and/or vent ..... *
7. For each gas piping system of one to five outlets ..... *
8. For each additional gas piping system outlet, per outlet ..... *
9. For each industrial waste pretreatment interceptor including its trap and vent, except kitchen type grease interceptors functioning as fixture traps ..... *
10. For each installation, alteration or repair of water piping and/or water treating equipment, each ..... *
11. For each repair or alteration of drainage or vent piping, each fixture ..... *
12. For each lawn sprinkler system on any one meter including backflow protection devices therefor ..... *
13. For atmospheric-type vacuum breakers not included in item 12:
    - 1 to 5 ..... *
    - over 5, each ..... *
14. For each backflow protective device other than atmospheric type vacuum breakers:
    - 2 inch (51 mm) diameter and smaller ..... *
    - over 2 inch (51 mm) diameter ..... *
15. For each graywater system ..... *
16. For initial installation and testing for a reclaimed water system ..... *
17. For each annual cross-connection testing of a reclaimed water system (excluding initial test) ..... *
18. For each medical gas piping system serving one to five inlet(s)/outlet(s) for a specific gas ..... *
19. For each additional medical gas inlet(s)/outlet(s) ..... *

Other Inspections and Fees

1. Inspections outside of normal business hours ..... *
2. Reinspection fee ..... *
3. Inspections for which no fee is specifically indicated ..... *

4. Additional plan review required by changes, additions or revisions to approved plans (minimum charge – one-half hour) .....*_____

* Jurisdiction will indicate their fees here.

104.0 Licensing

104.1 General. Before any person shall engage in the plumbing business within the jurisdiction, the person shall secure a state license as a master plumber, as required by the Texas State Board of Plumbing Examiners under the current Plumbing License Law. A master license holder shall annually register his/her state plumbing license with the Administrative Authority during the month of initial registration.

The Administrative Authority shall not register a master plumber as a contractor until and unless the master plumber furnishes proof of comprehensive general liability insurance (including products liability and completed operations coverage) with minimum limits of $300,000 for death or bodily injury and $300,000 for property damage, per occurrence. The policy must be issued by a carrier that is listed with a rating of B+ or better in the last published edition of Best's Insurance Reports-Property Casualty Volume (published by A. M. Best Company, Oldwich, New Jersey 08858). It shall be the duty of each registered contractor to maintain current proof of coverage with the Administrative Authority, and no registration shall be effective at any time that current proof is not on file with the Administrative Authority. The proof of coverage shall be provided in the form of a certificate or policy issued by an authorized agent or employee of the company issuing the policy that specifies the coverage and identifies the insured. Each certificate or policy that specifies the coverage and identifies the insured. Each certificate or policy shall provide that not less than 10 days' written notice shall be given to the Administrative Authority in the event of reduction or cancellation of the policy prior to the expiration date specified on the certificate or policy.

104.2 License to do Plumbing Work. Each person engaged in the actual installation of plumbing shall be licensed either as a master or current journeyman plumber or registered as an apprentice by the Texas State Board of Plumbing Examiners under the Plumbing License Law. The Plumbing License Law is codified as Article 6243-101 of the Texas Revised Civil Statutes; however, that article is repealed and replaced by Chapter 1301 of the Texas Occupations Code effective June 1, 2003. A licensed master plumber must have a medical gas endorsement to engage in the installation of medical gas.

104.3 Licensing of Drain Layers. Before any person except a master plumber engages in the business of laying sanitary or storm sewers, the person shall make an application for and secure a drain layer's license. The application for and issuance of such license shall be in accordance with Chapter 47 of the City Code.

104.3.1 Registered irrigators. Before any person except a master plumber engages in the installation of lawn irrigation systems, the person shall obtain a certificate of registration (license) under state law and register with the Administrative Authority. This requirement shall not extend to work that is exempt under

this Code and state law. The practice of irrigation is regulated under Chapter 34 of the Texas Water Code; however, that Chapter is repealed and replaced by Chapter 1903 of the Texas Occupation Code effective June 1, 2003.

104.3.2 Certified Water Treatment Specialists. Before any person except a master plumber engages in the business of installing water treatment equipment, the person must secure a State of Texas Water Treatment Specialist Certification under Chapter 341 of the Texas Health and Safety Code, and register the certification with the Administrative Authority.

104.4 Illegal Work. Any person engaged in the plumbing or drain laying business whose work does not conform to this Code, or whose workmanship or materials are of inferior quality, shall, upon notice from the Administrative Authority, make necessary changes or corrections at once so as to conform to this Code. If work has not been so changed after 10 days notice from the Administrative Authority, he or she shall then refuse to issue any further permits to the person until the nonconforming work has been fully corrected in accordance with this Code.

104.5 Allowing One's Name or License to Be Used to Obtain Permit Fraudulently. No person engaged in the business or plumbing or laying drains shall allow his name to be used by any other person directly or indirectly, to obtain a permit.

104.6 Identification of Vehicles Required. Each person engaged in the plumbing business in the jurisdiction shall identify all vehicles used in the business with signs showing the name of the business and master plumber's license number. This information shall be correct at all times, shall be painted on each side of each vehicle and shall be in full view and legible at all times. Lettering shall be a minimum of 2 inches (50.8 mm) high.

104.7 Registration Fee. The annual fee for contractor registration required in Section 104.1 shall be $75.00.

105.0 Board of Appeals

105.1 Creation and Composition. There is hereby created a Plumbing Code Review Board consisting of seven members. Each Board member, except the member in Position 7, shall be appointed by the Mayor and confirmed by the City Council. The Mayor shall designate the member to be chairman. Each of the seven positions shall be numbered:

1. Positions 1 and 2 shall be filled by professional engineers registered by the State of Texas who are actively engaged in the design of plumbing systems.
2. Positions 3 and 4 shall be filled by duly licensed master plumbers.
3. Position 5 shall be filled by a degreed engineer who is in the employ of a local gas utility company.
4. Position 6 shall be filled by a member at large.
5. Position 7 shall be filled by the chief plumbing inspector of this jurisdiction.

105.2 Terms of Office. The terms of office for the appointees to Positions Nos. 1, 3, and 5 shall expire on the second day of January of odd-numbered years, and the terms of office for the appointees to Positions Nos. 2, 4, and 6 shall expire on the second day of January of even numbered years; however, each member shall continue in office until his/her respective successor shall have been appointed and qualified. The adoption of this Code shall not terminate the term of office of any person currently serving in any position on the Board.

In addition to other qualifications herein above required, each member of the Board shall be a citizen of the United States. All members of the Board shall be selected on the basis of their technical and professional qualifications except that the appointee to Position No. 6 is not required to have technical and professional qualifications.

Each member of the Board shall be subject to removal by the Mayor.

Whenever any position on the Board becomes vacant by reason of death, resignation, or removal, said vacancy shall be filled for the unexpired term of the member being replaced. Should a vacancy occur on the board, the Mayor shall appoint, subject to confirmation by City Council, another qualified person to serve the unexpired term of such vacancy.

The Board shall hold meetings in this jurisdiction at times and places to be designated by the chairman, who is also authorized to call special meetings when deemed necessary. Each member of the Board shall receive $50.00 for each meeting he/she attends at which a quorum is present; provided, however, those members who are employees of this jurisdiction will be paid only for those meetings they attend that are neither held during nor continue beyond their regular working hours. Members shall not be compensated for more than three meetings in any one calendar month.

105.3 Quorum. Four Board members present at any meeting shall constitute a quorum for the transaction of all business of said Board. A majority vote of the Board members present at any meeting constituting a quorum shall prevail.

105.4 Review of Action of Plumbing Inspectors. Disputes arising between plumbing inspectors and any person concerning the application of the provisions of this Code to the installation of plumbing facilities to serve property of the person may be submitted to the Administrative Authority. Any interested party (other than an inspector of this jurisdiction) who is dissatisfied with the decision of the Administrative Authority on the matter may appeal that decision to the Board by making application therefor in writing to the Administrative Authority. The Administrative Authority shall forward the application to the Board chairman. The Board chairman shall inform the applicant and the Administrative Authority in writing of the date and time set for a hearing on the matter. If the applicant fails to appear at the hearing, either in person or by attorney, the dispute shall be decided against the applicant. Each party to the dispute shall be entitled to present his or her side of the matter to the Board, and the Board shall render its decision on the matter based upon its interpretation of the applicable provisions of this Code. Any party to the dispute who is dissatisfied with the Board's decision shall have the right to appeal the decision to the City Council, by delivering a written notice of appeal to the office of

the City Secretary within 10 days of the date of the Board's decision. The City Council shall affirm, reverse or modify the Board's decision based upon the City Council's interpretation of the applicable provisions of this Code. The City Council's decision on the matter shall be final. All appeals to the City Council are subject to the rules of the City Council, which are codified in Section 2-2 of the City Code and are available from the City Secretary. Parties wishing to preserve their right of appeal must comply with the rules of the City Council, including Rule 12.

105.5 Review of New Materials, Methods and Interpretations of this Code. Any person whose plumbing products are not specifically approved by this Code may file a petition in writing for approval thereof with the Administrative Authority, who shall determine whether the material or method should be approved pursuant to this Code. If the Administrative Authority denies approval of the material or method, the decision may be appealed to the Board. Such an appeal shall be by a petition delivered to the Administrative Authority who in turn shall deliver the petition to the chairman of the Board. The Board shall, within 30 days after the date of filing of the petition, hear the petition and determine the merits of the material or method. The Board may establish any additional tests to which the product must be subjected if the Board finds the tests necessary to determine whether the product should be approved. Any and all tests shall be made at the petitioner's expense, and the petitioner shall deposit the cost with this jurisdiction before the tests are made. If additional tests are required, the Board shall render its decision within 30 days after the tests are completed.

In the event the Board is of the opinion that the plumbing should be approved, pursuant to Section 301.2 of this Code, they shall so state in the minutes of the Board and such plumbing shall be approved.

CHAPTER 2

DEFINITIONS

Administrative Authority – The ~~individual official, board, department, or agency established and authorized by a state, county, city, or other political subdivision created by law to~~ Director of the Planning and Development Department who is appointed to administer and enforce the provisions of this Code ~~the plumbing code as adopted or amended~~. This definition shall include the Administrative Authority's duly authorized representatives.

City Code – The Code of Ordinances, Houston, Texas.

CHAPTER 3
GENERAL REQUIREMENTS

305.3 ~~In cities and/or counties, where the installation of building sewers is under the jurisdiction of a department other than the Administrative Authority, the provisions of this Code relating to building sewers need not apply~~. Where on-site sewage disposal systems are utilized, they shall show proof of compliance with Chapter 366, Texas Health and Safety Code, including any amendments thereto which may be made from time to time.

311.1 No double hub fitting, single or double tee branch, single or double tapped tee branch, side inlet quarter bend, running thread, band, or saddle shall be used as a drainage fitting, except that a double hub sanitary tapped tee may be used on a vertical line as a fixture connection.

Exception: Wye saddles may be used outside the building when the building sewer is three (3) times the area of the branch.

313.9 Plastic and copper piping run through framing members to within one (1) inch (25.4 mm) of the exposed framing shall be protected by steel nail plates not less than 18 gauge.

~~**Exception:** See Section 1211.8.~~

319.5 Testing for gas systems shall be as required by Chapter 12.

CHAPTER 4
FIXTURES

412.8 When the construction of on-site built-up shower receptors is permitted by the Administrative Authority, one of the following means shall be employed:

(1) Shower receptors built directly on the ground:

Shower receptors built directly on the ground shall be watertight and shall be constructed from approved type dense, non-absorbent and noncorrosive materials. Each such receptor shall be adequately reinforced, shall be provided with an approved flanged floor drain designed to make a watertight joint in the floor, and shall have smooth, impervious, and durable surfaces.

Exception: Gang- type institutional showers on the ground floor do not require shower pans if a monolithic curb at least six (6) inches (152 mm) high is poured around the perimeter of the shower. The curb may be eliminated at the entrance to allow for wheelchair use.

(2) Shower receptors built above ground:

When shower receptors are built above ground the sub-floor and rough side of walls to a height of not less than three (3) inches (76 mm) above the top of the finished dam or threshold shall be first lined with sheet plastic*, lead* or copper* or shall be lined with other durable and watertight materials. All lining materials shall be pitched one-quarter (1/4) inch per foot (20.9 mm/m) to weep holes in the sub-drain of a smooth and solidly formed sub-base. All such lining materials shall extend upward on the rough jambs of the shower opening to a point no less than three (3) inches (76 mm) above the top of the finished dam or threshold and shall extend outward over the top of the rough threshold and be turned over and fastened on the outside face of both the rough threshold and the jambs. Non-metallic shower sub-pans or linings may be built-up on the job site of not less than three (3) layers of standard grade fifteen (15) pound (6.8 kg) asphalt impregnated roofing felt. The bottom layer shall be fitted to the formed sub-base and each succeeding layer thoroughly hot mopped to that below. All corners shall be carefully fitted and shall be made strong and watertight by folding or lapping, and each corner shall be reinforced with suitable webbing hot-mopped in place. All folds, laps, and reinforcing webbing shall extend at least four (4) inches (102 mm) in all directions from the corner and all webbing shall be of approved type and mesh, producing a tensile strength of not less than fifty (50) psi (344.5 kPa) in either direction. Non-metallic shower sub-pans or linings may also consist of multilayers of other approved equivalent materials suitably reinforced and carefully fitted in place on the job site as elsewhere required in this section. Linings shall be properly recessed and fastened to approved backing so as not to occupy the space required for the wall covering and shall not be nailed or perforated at any point which may be less than one (1) inch (25.4 mm) above the finished dam or threshold. An approved type sub-drain shall be installed with every shower sub-pan or

lining. Each such sub-drain shall be of the type that sets flush with the sub-base and shall be equipped with a clamping ring or other device to make a tight connection between the lining and the drain. The sub-drain shall have weep holes into the waste line. The weep holes located in the sub-drain clamping ring shall be protected from clogging.

_____

*Lead and copper sub-pans or linings shall be insulated from all conducting substances other than their connecting drain by fifteen (15) pound (6.8 kg) asphalt felt or its equivalent and no lead pan or liner shall be constructed of material weighing less than four (4) pounds per square foot (19.5 kg/m²). Copper pans or liners shall be at least No. 24 B & S Gauge (0.02 inches) (0.5 mm). Joints in lead pans or liners shall be burned. Joints in copper pans or liners shall be soldered or brazed. Plastic pans shall not be coated with asphalt based materials.

413.1 Fixture Count. ~~Plumbing fixtures shall be provided for the type of building occupancy and in the minimum number shown in Table 4-1~~. Each building shall be provided with sanitary facilities as prescribed in Chapter 29 of the City of Houston Building Code.

CHAPTER 5
WATER HEATERS

510.1 All new or replacement water heaters generating a glow, spark or flame capable of igniting flammable vapors may be installed in a garage, provided the pilots, burners or heating elements and switches are at least eighteen (18) inches (457 mm) above the floor level.

511.2 Every attic, roof, mezzanine, or platform more than eight (8) feet (2438 mm) above the ground or floor level shall be made accessible by a stairway or ladder permanently fastened to the building. Such a ladder or stairway shall not be more than eighteen (18) feet (5486 mm) in length between landings and not less than fourteen (14) inches (355 mm) in width. Such a ladder shall have rungs spaced not more than fourteen (14) inches (355 mm) center to center and not less than six (6) inches (152.4 mm) from the face of the wall. Each stile is to extend thirty (30) inches (762 mm) above the surface to be reached, or as high as possible, if height is limited. Permanent ladders for water heater access need not be provided at parapets or walls less than thirty (30) inches (762 mm) in height.

Exception: A portable ladder may be used for access for water heaters in attics in buildings with lift out ceilings. ~~on the single story portion of a Group U, Division 1 or R Occupancy.~~

603.3.3 The premise owner or responsible person shall have the backflow prevention assembly tested by a certified backflow assembly tester at the time of installation, repair, or relocation. ~~and at least on an annual schedule thereafter or more often when required by the Administrative Authority. The periodic testing shall be performed in accordance with the procedures referenced in Table 14-1 by a tester qualified in accordance with those standards~~. Periodic testing shall be done as required by the City of Houston Public Works and Engineering Department.

603.3.4 Access and clearance shall be provided for the required testing, maintenance and repair. Access and clearance shall require a minimum of one (1) foot (305 mm) between the lowest portion of the assembly and grade, floor or platform. ~~Installations elevated more than five (5) feet (1524 mm) above the floor or grade shall be provided with a permanent platform capable of supporting a tester or maintenance person.~~

603.4.9 Water Cooled Compressors, Degreasers or any other water cooled equipment shall be protected by a listed backflow preventer installed in accordance with the requirements of this chapter.

603.4.9.1 Water Used for Cooling of Equipment or similar purposes shall not be returned to the potable water distributing system. When discharged to the building drainage system, the waste water shall be discharged through an indirect waste pipe or air gap.

Note: Water cooled equipment which produces back-pressure shall be equipped with the appropriate protection.

603.4.14 Water Treatment Units. Reverse osmosis drinking water treatment units shall meet the requirements of the appropriate standard(s) referenced in Table 14-1. Waste or discharge from reverse osmosis or other types of water treatment units shall enter the drainage system through an airgap. Water supply for water softeners shall be protected by a double check valve assembly.

603.4.18.5 ~~Residential Sprinkler Systems.~~ ~~When residential sprinkler systems are installed using the potable water system they shall be installed in accordance with the standards listed in Table 14-1.~~ Where fire protection systems are supplied with potable water through an unmetered tap and supply line, the water supply shall be protected by one of the following:

(1) Double check detector assembly

(2) Reduced pressure detector assembly.

605.2 A fullway valve controlling all outlets shall be installed on the discharge side of each water meter and on each unmetered water supply. Water piping supplying ~~more than one building on~~ any ~~one~~ premises shall be equipped with a separate fullway valve to each building, so arranged that the water supply can be turned on or off to any individual or separate building; provided however, that supply piping to a single family residence and building accessory thereto, may be controlled on one valve. Such shutoff valves shall be accessible at all times. A fullway valve shall be installed on the discharge piping from water supply tanks at or near the tank. A fullway valve shall be installed on the cold water supply pipe to each water heater at or near the water heater.

605.8 Combination waste valves and cocks shall not be installed in an underground service pipe. They shall be installed above ground before entering the building.

606.2.2 Plastic Fittings. Female PVC screwed fittings for water piping ~~shall be used with plastic male fittings and plastic male threads only.~~ are prohibited.

607.0 ~~Gravity~~ Supply Tanks

~~Gravity tanks for potable water shall be tightly covered, and have not less than a sixteen (16) square inch (10,323 mm²) overflow screened with copper screen having not less than fourteen (14) nor more than eighteen openings per linear inch (25.4 mm).~~

607.1 Water-supply Tanks. All potable water-supply tanks shall be properly covered or sealed to prevent entrance of foreign material into the water supply. Soil or waste lines shall not pass directly over nonpressure water-supply tanks or over manholes in pressure tanks.

607.2 Pressure Tanks and Relief Valves. The drains from pressure tanks, relief valves, and similar equipment shall be connected to the drainage system through an indirect waste line.

607.3 Cleaning, Painting, Repairing Water Tanks. A potable water-supply tank for domestic purposes shall not be lined, painted or repaired with any material not in compliance with the current ANSI/AWWA D102 Standards and which has not been approved by the Administrative Authority.

607.4 When Required. When the water pressure from the public water main during flow is insufficient to supply fixtures, that are likely to be in simultaneous operation, the supply shall be from a gravity house tank, pressure tank, or booster system.

No pumps are permitted to take suction directly from a jurisdiction main.

EXCEPTION: Pumps may be allowed to take suction from the jurisdiction main when approved by the Administrative Authority if the main is of sufficient size as determined and approved by the Water Engineering Division of the Public Works and Engineering Department.

607.5 Support and Construction. All water-supply tanks shall be supported in accordance with the City of Houston Building Code. Tanks shall be of approved construction.

607.6 Overflow for Water-Supply Tanks. Overflow pipes for gravity tanks shall discharge above and within 6 inches of a roof drain, floor drain or catch basin, or they shall discharge into an open hub drain or water-supplied sink. Adequate overflow pipes properly screened against the entrance of insects and vermin shall be provided.

607.7 Drains. Water-supply tanks shall be provided with valved drain lines located at their lowest point and discharged as indirect waste, or as required for overflow pipes.

607.8 Tanks. Below-rim supply.

(1) Where a potable water outlet terminates below the rim of a tank, the tank shall have an overflow of diameter not less than that given in the following table:

Sizes of Overflow Pipes for Water-supply Tanks

Maximum Capacity of Water Supply Line to Tank	Diameter of Overflow Pipe (inches ID)	Maximum Capacity of Water-supply Line to Tank	Diameter of Overflow Pipe (inches ID)
0-50 gpm	2	400-700 gpm	5
50-150 gpm	2½	700-1,000 gpm	6
100-200 gpm	3	over 1,000 gpm	8
200-400 gpm	4		

(2) The potable water inlet to the tank or vat shall terminate a distance of not less than one and one half times the height to which water can rise in the tank above the top of the overflow.

(3) The distance from the inlet to the high water level shall be measured from the critical point of the potable water supply overflow.

607.9 Protective Devices Required. Approved devices to protect against backflow and backsiphonage shall be installed at all fixtures and equipment where backflow and/or backsiphonage may occur and where a minimum air gap cannot be provided between the water outlet to the fixture or equipment and its flood-level rim.

607.10 Construction of Tanks. Tanks used for potable water supply or to supply standpipes for fire-fighting equipment only shall be equipped with tight vermin-proof covers. Such tanks shall be vented with a return bend vent pipe having an area not less than one half of the area of the overflow riser. The vent opening and

overflow riser shall be covered with a metallic screen of not less than 100 mesh. To provide an air gap, the top of the overflow riser shall not be less than 2 inches (50.8 mm) below the fill connection.

The potable water supply shall be protected from contamination by the fire standpipe supply by a divided suction tank or a separate tank for potable water supply or by installing on the downstream side of the fire pumps an approved backflow preventer. When a divided tank is used, the tank shall be divided by a double wall partition extending to the top of the tank, and each wall shall be sealed with a continuous weld between the wall and four sides of the tank. There shall be an air space between the walls of the partition of not less than four inches (100.16 mm) with an opening (not threaded) at the bottom of the partition to give visual evidence of loss of integrity of the walls of the partition (see Figure 6.1). The air space between the partition walls shall be given a one PSI air test with all welds soaped to assure no leaks in the partition chamber. The tank fabricator shall furnish a certificate of compliance with this test and a metal nameplate on the tank giving the name of the fabricator, the date of fabrication, and a serial number. All tanks for potable water service shall be constructed of new material to assure against possibility of contamination from previous usage.

607.11 Piping. Water piping from potable gravity and suction tanks to the suction side of the water pumps and from discharge end of the pumps to the check valve shall be galvanized.

607.12 Vacuum Breaker. Pressure tanks used for supplying water to the potable water distribution system, to both the fire standpipes and the potable system, or to supply standpipes for fire equipment only, shall be equipped with an acceptable vacuum breaking device located on the top of the tank. The air inlet of this device shall be covered with a metallic screen of not less than 100 mesh.

607.13 Tankless Booster System. Tankless systems shall be designed to eliminate shock to the piping system when the pumps start and stop.

607.14 Disinfection of Potable Water-Supply Tanks. After a potable water-supply tank has been cleaned, painted or repaired and before it is returned to use, it shall be disinfected by one of the following:

(1) By filling with a solution containing 50 ppm (parts per million) of available chlorine and allowing it to stand for four hours before flushing the tank and returning to use.

(2) By filling with a solution containing 100 ppm of available chlorine and allowing it to stand for two hours before flushing the tank and returning it to use.

609.3.1 ~~Ferrous piping shall have a protective coating of an approved type, machine applied and conforming to recognized standards. Field wrapping shall provide equivalent protection and shall be restricted to those short sections and fittings necessarily stripped for threading. Zinc coating (galvanizing) shall not be deemed adequate protection for piping or fittings. Approved non-ferrous piping shall not be required to be wrapped.~~ Approved materials may be installed without joints and must be sleeved where it penetrates the floor. Pipe sleeves shall have a minimum wall thickness of 1/16 inch. No portion of the water pipe shall be in contact with the concrete. In water services that are 3 inches or larger, one fitting

may be installed under the slab within 5 feet of the exterior of the building. The fitting shall be installed to allow for replacement without any damage being done to the structure. Galvanized pipe shall not be used in or under slabs.

Figure 6-1

CHAPTER 7
SANITARY DRAINAGE

701.1 Drainage piping shall be cast iron, galvanized steel, galvanized wrought iron, lead, copper, brass, schedule 40 ABS DWV, Schedule 40 PVC DWV~~, extra strength vitrified clay pipe~~ SDR 35 plastic pipe in sizes 8 inches or larger, or other approved materials having a smooth and uniform bore, except that:

701.1.3 Reserved. ~~No vitrified clay pipe or fittings shall be used above ground or where pressurized by a pump or ejector. They shall be kept at least twelve (12) inches (305 mm) below ground.~~

701.3 Lead

See Table 14-1. Sheet lead shall be not less than the following:

For safe pans – not less than four (4) pounds per square foot (19.5 kg/m²) or 1/16 inch (1.6 mm) thick.

For flashings or vent terminals – not less than ~~three (3)~~ two and one half (2½) pounds per square foot (~~15~~12.5 kg/m²) or 1.2 mm thick.

Lead bends and lead traps shall not be less than one-eighth (1/8) inch (3.2 mm) wall thickness.

703.1.1 Piping installed below a slab on grade or matt type foundation shall be not less than two (2) inches in diameter.

710.1 Drainage piping serving fixtures which have flood level rims located below the elevation of the next upstream manhole cover of the public or private sewer serving such drainage piping shall be protected from backflow of sewage~~. by installing an approved type backwater valve. Fixtures above such elevation shall not discharge through the backwater valve.~~ Approval by the Administrative Authority must be obtained for the method used.

711.0 Suds Relief

Drainage connections shall not be made into a drainage piping system within eight (8) feet (2438 mm) of any vertical to horizontal change of direction of a stack containing suds-producing fixtures. ~~Bathtubs,~~ Laundries and ~~,~~ washing machine stand pipes~~, kitchen sinks and dishwashers~~ shall be considered suds-producing fixtures. Where parallel vent stacks are required, they shall connect to the drainage stack at a point eight (8) feet (2438 mm) above the lowest point of the drainage stack.

Exceptions:

(1) Single family residences.

(2) Stacks receiving the discharge from less than three (3) stories of plumbing fixtures.

713.4 The public sewer may be considered as not being available when such public sewer or any building or any exterior drainage facility connected thereto, is located more than ~~two~~ three hundred ~~(200) (~~ 300) feet (~~60.8 m~~ 91.2 m) from any proposed building or exterior drainage facility on any lot or premises which abuts and is served by such public sewer.

715.1 The building sewer, beginning two (2) feet (610 mm) from any building or structure, shall be of such materials as may be approved by the Administrative Authority under the approval procedures set forth in Chapter 3 of this Code. Pipe sizes 6 inches and smaller shall be PVC schedule 40, and pipe sizes 8 inches or larger may be SDR 35.

722.1 Every abandoned building (house) sewer, or part thereof, shall be plugged or capped in an approved manner within five (5) feet (1524 mm) of the property line.

Before any building may be demolished, a sewer disconnect permit shall be obtained and an inspection made to verify that the sewer has been properly capped within 5 feet of the property line and that the water service has been disconnected and capped at the meter.

724.0 Private Sewage Disposal Systems

Private sewage disposal systems shall conform to all applicable state laws and regulations, including the "Construction Standards for Private Sewage Facilities," as published by the Texas Natural Resources Conservation Commission.

CHAPTER 8
INDIRECT WASTES

804.3 Accessible indirect waste receptors may be fabricated utilizing a "P" trap, riser stub, and an increaser to form a funnel.

~~810.0 Steam and Hot Water Drainage Condensers and Sumps~~

810.1 No steam pipe shall be directly connected to any part of a plumbing or drainage system, nor shall any water having a temperature above one hundred and forty (140)°F (60°C) be discharged under pressure directly into any part of a drainage system. Pipes from boilers shall discharge by means of indirect waste piping, as determined by the Administrative Authority or the boiler manufacturer's recommendations. Such pipes may be indirectly connected by discharging into an open or closed condenser, or intercepting sump of approved type, that will prevent the entrance of steam or such water under pressure into the drainage system. All closed condensers or sumps shall be provided with a vent which shall be taken off the top and extended separately, full size above the roof. All condensers and sumps shall be properly trapped at the outlet with a deep seal trap extending to within six (6) inches (152 mm) of the bottom of the tank. The top of the deep seal trap shall have a three-fourths (3/4) inch (19.1 mm) opening located at the highest point of the trap to serve as a siphon breaker. Outlets shall be taken off from the side in such a manner as to allow a water line to be maintained that will permanently occupy not less than one-half (1/2) the capacity of the condenser or sump. All inlets shall enter above the water line. Wearing plates or baffles shall be installed in the tank to protect the shell. The sizes of the blowoff line inlet, the water outlets, and the vent shall be as shown in Table 8-1. The contents of condensers receiving steam or hot water under pressure must pass through an open sump before entering the drainage system. Water above 113°F shall not be discharged to the jurisdiction's drainage system.

811.1 Chemical or industrial liquid wastes which are likely to damage or increase maintenance costs on the sanitary sewer system, detrimentally affect sewage treatment, or contaminate surface or subsurface waters, shall be pretreated to render them innocuous prior to discharge into a drainage system. Detailed plans and specifications of the pretreatment facilities ~~shall~~ may be required by the Administrative Authority when the Administrative Authority finds that such plans and specifications will aid in enforcing the provisions of this Code or other laws and ordinances.

Piping conveying industrial, chemical, or process wastes from their point of origin to sewer connected pretreatment facilities shall be of such material and design as to adequately perform its intended function to the

satisfaction of the Administrative Authority. Drainage discharge piping from pretreatment facilities or interceptors shall conform to standard drainage installation procedure.

Copper tube shall not be used for chemical or industrial wastes as defined in this section.

811.7 No chemical wastes shall be discharged into the ~~ground~~, local sewer, ~~or other means~~ except where authorized by the ~~without approval of the local~~ Administrative Authority in accordance with the provisions of all applicable ordinances and federal and state laws. No chemical wastes shall be discharged into the ground or disposed of by any other means except in accordance with all federal, state and local laws and regulations.

811.9 An approved vented neutralizing basin is a basin with a bolted removable cover and dip-pipe outlet that is constructed of acid-resistant material such as molded seamless polyethylene, one-piece acid-proof chemical stoneware, lined carbon steel, or other material approved by the Administrative Authority. Neutralizing basins shall be sized according to Table 8-2.

Table 8-2

Number of sinks	Tank Capacity (Gallons)
1	5
4	15
8	30
16	55
25	100
40	150
60	200
75	275
100	350
200	675
300	1200

500	2000

1. Tank capacities are measured from invert inlet.
2. Neutralization basins receiving intermittent discharge from equipment shall be sized according to the manufacturer's recommendations. Sizing criteria shall be shown on drawings.

811.10 Neutralization basins shall be provided with neutralizing material such as pieces of marble or limestone, 1 inch to 3 inches in size, so as to render effluent to a pH not less than 6 nor more than 10 before the effluent is discharged into the sewer system.

~~**815.0 Condensate Wastes and Control**~~

~~**815.1 Condensate Disposal.** Condensate from air washers, air cooling coils, fuel-burning condensing appliances, the overflow from evaporative coolers and similar water supplied equipment or similar air conditioning equipment shall be collected and discharged to an approved plumbing fixture or disposal area. If discharged into the drainage system equipment shall drain by means of an indirect waste pipe. The waste pipe shall have a slope of not less than 1/8 inch per foot (10.5 mm/m) or one percent slope and shall be of approved corrosion-resistant material not smaller than the outlet size as required in either Section 310.3 or 310.4 below for air-cooling coils or condensing fuel-burning appliances, respectively. Condensate or waste water shall not drain over a public way.~~

~~**815.2 Size.** Air-conditioning condensate waste pipes shall be independent of any drainage and waste system and shall not be smaller than shown in Table 8-2.~~

~~**TABLE 8-2**~~

~~**Equipment Capacity in Tons of Refrigeration (kW)**~~		~~**Minimum Condensate Pipe Diameter in Inches (mm)**~~	
~~Through 3~~	~~(Through 10.56)~~	~~3/4~~	~~(20)~~
~~Through 20~~	~~(Through 70.33)~~	~~1~~	~~(25)~~
~~Through 90~~	~~(Through 316.48)~~	~~1¼~~	~~(32)~~
~~Through 125~~	~~(Through 439.6)~~	~~1½~~	~~(40)~~
~~Through 250~~	~~(Through 879.2)~~	~~2~~	~~(50)~~

~~The size of condensate waste pipes may be for one unit or a combination of units, or as~~

recommended by the manufacturer. The capacity of waste pipes assumes a one-eighth (1/8) inch per foot (10.5 mm/m) or one percent slope, with the pipe running three-quarter (3/4) full at the following conditions:

Outside Air – 20%		**Room Air – 80%**	
DB	WB	DB	WB
90°F	73°F	75°F	62.5°F
(32°C)	(23°C)	(24°C)	(17°)

Condensate drain sizing for other slopes or other conditions shall be approved by the Administrative Authority.

Air conditioning waste pipes shall be constructed of materials specified in Chapter 7.

815.3 Point of Discharge. Air-conditioning condensate waste pipes shall connect indirectly to the drainage system through an airgap or airbreak to:

815.3.1 A properly trapped receptor; or

815.3.2 Other points of discharge acceptable to the Administrative Authority, including dry wells, leach pits, the tailpiece of plumbing fixtures, etc.

815.3.3 Condensate or waste water shall not drain over a public way.

CHAPTER 10

TRAPS AND INTERCEPTORS

1011.0 Minimum Requirements for Auto Wash Racks

Every private or public wash rack and/or floor or slab used for cleaning machinery or machine parts shall be adequately protected against storm or surface water and shall drain or discharge into an interceptor (clarifier) of an approved design for this use. See Appendix H, Drawing MT-1, for minimum size and construction criteria.

1012.0 Commercial and Industrial Laundries. Laundry equipment in commercial and industrial buildings that does not have integral strainers shall discharge into an interceptor having a wire basket or similar device, that is removable for cleaning and that will prevent passage into the drainage system of solids one-half (1/2) inch (12.7 mm) or larger in maximum dimension, such as string, rags, buttons, or other solid materials detrimental to the public sewerage system. An approved lint interceptor shall be installed for all commercial laundries. See Appendix H, Drawings LT-1, LT-2, and LT-3, for minimum size and construction criteria.

CHAPTER 11
STORM DRAINAGE

1101.1 Where Required. All roofs, paved areas, yards, courts, and courtyards shall be drained into a separate storm sewer system. ~~or into a combined sewer system where a separate storm sewer system is not available,~~ or to some other place of disposal satisfactory to the Administrative Authority. In the case of one- and two-family dwellings, storm water may be discharged on flat areas such as streets or lawns so long as the storm water shall flow away from the building and away from adjoining property, and shall not create a nuisance.

1101.11.1 Primary Roof Drainage. Roof areas of a building shall be drained by roof drains or gutters. The location and sizing of drains and gutters shall be coordinated with the structural design and pitch of the roof. Unless otherwise required by the Administrative Authority, roof drains, gutters, vertical conductors or leaders, and horizontal storm drains for primary drainage shall be sized based on a storm ~~of sixty (60) minutes duration and 100-year return period (see Appendix D).~~ of eight (8) inches of rainfall per hour.

1101.11.2.2 Where secondary roof drainage is provided by means of roof drains or standpipes, the secondary system shall be separate from the primary system and shall discharge independently at grade, to the vertical drop of the primary system, or other approved point of discharge.

1101.11.2.4 Scuppers shall be sized as rectangular weirs., ~~using hydraulic principles to determine the required length and resulting overflow head (See Appendix D).~~ The minimum cross-sectional shall be three times the cross-sectional area of the primary roof drain and the scupper shall have a minimum opening dimension of 4 inches. The flow through the primary system shall not be considered when sizing the secondary roof drain system. Secondary roof drains and standpipes shall be sized according to Table 11-1. Where standpipes are used, the head allowance required under section 1101.11.2.3 shall be not less than one and one-half (1½) inches (38 mm).

1102.1.2 The inside of conductors installed above ground level shall be of seamless copper water tube, Type K, L or M; Schedule 40 copper pipe or Schedule 40 copper alloy pipe; Type DWV copper drainage tube; service weight cast iron soil pipe or hubless cast iron soil pipe; standard weight galvanized steel pipe; ~~or~~ Schedule 40 ABS or Schedule 40 PVC plastic pipe, or SDR 35 plastic pipe..

1102.2.2 Leaders shall be of seamless copper water tube, Type K, L or M; Schedule 40 copper pipe; Schedule 40 copper alloy pipe; type DWV copper drainage tube; service weight cast iron soil pipe or hubless cast iron soil pipe; aluminum sheet metal, galvanized steel sheet metal or copper sheet metal; standard weight galvanized steel pipe; Class DL or XL lead pipe; ~~or~~ Schedule 40 ABS or Schedule 40 PVC plastic pipe or SDR 35 plastic pipe.

1102.3 Underground Building Storm Drains. All underground building storm drains shall be constructed of materials specified in Table 14-1.

Exception: SDR 35 plastic pipe in sizes 8" or larger.

1103.2 Reserved. ~~**Where Not Required.** No trap shall be required for a leader(s) or conductor(s) which is connected to a sewer carrying storm water exclusively.~~

~~**1103.4 Method of Installation of Combined Sewer.** Individual storm-water traps shall be installed on the storm-water drain branch serving each storm-water inlet, or a single trap shall be installed in the main storm drain just before its connection with the combined building sewer. Such traps shall be provided with an accessible cleanout on the outlet side of the trap.~~

1104.3 Combining Storm with Sanitary Drainage. The sanitary and storm drainage system of a building shall be entirely separate. ~~, except where a combined sewer is used, in which case the building storm drain shall be connected in the same horizontal plane through single wye fittings to the combined building sewer at least ten (10) feet (3048 mm) downstream from any soil stack.~~

TABLE 11-1

Sizing Roof Drains, Leaders, and Vertical Rainwater Piping

Size of Drain, Leader or Pipe, Inches	Flow, gpm	Maximum Allowable Horizontal Projected Roof Areas Square Feet at Various Rainfall Rates						
		1"/hr	2"/hr	3"/hr	4"/hr	5"/hr	6"/hr	8"/hr
2	23	2176	1088	725	544	435	363	272
3	67	6440	3220	2147	1610	1288	1073	805
4	144	13840	6920	4613	3460	2768	2307	1730
5	261	25120	12560	8373	6280	5024	4187	3140
6	424	40800	20400	13600	10200	8160	6800	5100
8	913	88000	44000	29333	22000	17600	14667	11000

Notes:

1. The sizing data for vertical conductors, leaders, and drains is based on the pipes flowing 7/24 full.
2. For rainfall rates other than those listed, determine the allowable roof area by dividing the area given in the 1 inch/hour (25 mm/hour) column by the desired rainfall rate.
3. Vertical piping may be round, square, or rectangular. Square pipe shall be sized to enclose its equivalent round pipe. Rectangular pipe shall have at least the same cross-sectional area as its equivalent round pipe except that the ratio of its side dimensions shall not exceed 3 to 1.

TABLE 11-2
Sizing of Horizontal Rainwater Piping

Size of Pipe, inches	Flow at ⅛"/ft. Slope, gpm	Maximum Allowable Horizontal Projected Roof Areas Square Feet at Various Rainfall Rates						
		1"/hr	2"/hr	3"/hr	4"/hr	5"/hr	6"/hr	8"/hr
3	34	3288	1644	1096	822	657	548	411
4	78	7520	3760	2506	1880	1504	1253	906
5	139	13360	6680	4453	3340	2672	2227	1670
6	222	21400	10700	7133	5350	4280	3566	2675
8	478	46000	23000	15330	11500	9200	7670	5750
10	860	82800	41400	27600	20700	16580	13800	10350
12	1384	133200	66600	44400	33300	26650	22200	16650
15	2473	238000	119000	79333	59500	47600	39650	29750

Size of Pipe, inches	Flow at ¼"/ft. Slope, gpm	Maximum Allowable Horizontal Projected Roof Areas Square Feet at Various Rainfall Rates						
		1"/hr	2"/hr	3"/hr	4"/hr	5"/hr	6"/hr	8"/hr
3	48	4640	2320	1546	1160	928	773	580
4	110	10600	5300	3533	2650	2120	1766	1325
5	196	18880	9440	6293	5720	3776	3146	2360
6	314	30200	15100	10066	7550	6040	5033	3775
8	677	65200	32600	21733	16300	13040	10866	8150
10	1214	116800	58400	38950	29200	23350	19450	14600
12	1953	188000	94000	62600	57000	37600	31350	23500
15	3491	336000	168000	112000	84000	67250	56000	43000

Size of Pipe, inches	Flow at ½"/ft. Slope, gpm	Maximum Allowable Horizontal Projected Roof Areas Square Feet at Various Rainfall Rates						
		1"/hr	2"/hr	3"/hr	4"/hr	5"/hr	6"/hr	8"/hr
3	68	6576	3288	2192	1644	1310	1096	822
4	156	15040	7520	5010	3760	3010	2500	1880
5	278	26720	13360	8900	6680	5320	4450	3340
6	445	42800	21400	14267	10700	8580	7140	5350
8	956	92000	46000	30650	23000	18400	15320	11500
10	1721	165600	82800	55200	41400	33150	27600	20700
12	2768	266400	133200	88800	66600	53200	44400	33300
15	4946	476000	238000	158700	111900	95200	79300	59500

Notes:

1. The sizing data for horizontal piping is based on the pipes flowing full.
2. For rainfall rates other than those listed, determine the allowable roof area by dividing the area given in the 1 inch/hour (25 mm/hour) column by the desired rainfall rate.

CHAPTER 12
FUEL PIPING

1201.0 General

The regulations of this chapter shall govern the installation of all fuel gas piping in or in connection with any building or structure or within the property lines of any premises, other than service pipe.

Exception: This chapter shall not be applicable to liquid petroleum gas facilities regulated by the Railroad Commission of Texas pursuant to Chapter 113 of the Texas Natural Resources Code.

Note: All fuel oil facilities and piping shall conform to the requirements of Article 79 of the City of Houston Fire Code.

1201.1 Gas Tests.

A permit shall be required for all gas tests. Gas systems shall require a complete test and inspection in the following circumstances:

(1) During rough inspection and before startup of new installations.

(2) Before resumption of use of a system where service has been interrupted for more than 365 days for any reason.

(3) Before resumption of use of a system where service has been interrupted for any period of time because of one or more leaks or a fire.

(4) When the system was found to be unsafe by the serving gas supplier or the Administrative Authority.

(5) Where required by the City of Houston Fire Code.

(6) Where service is not commenced within 180 days following a gas test.

1204.3.1 Rough Piping Inspection

This inspection shall be made after all gas piping authorized by the permit has been installed, and before any such piping has been covered or concealed, or any fixture or appliance has been attached thereto. This inspection shall include a determination that the gas piping size, material, and installation meet the requirements of this Code. This inspection shall also include a pressure test. The gas piping shall pass an air pressure test of 25 psi for a period of fifteen (15) minutes with no perceptible drop.

Exception: For metal welded piping, and for piping carrying gas at pressure in excess of fourteen (14) inches (0.4 m) water column pressure, the test pressure shall be not less than one hundred (100) psi (689 kPa) for thirty (30) minutes. These tests shall be made using air, CO_2, or nitrogen pressure only and shall be made in the presence of the inspector. All necessary apparatus for conducting tests shall be furnished by the permit holder.

1204.3.2 Final Piping Inspection

This inspection shall be made after all piping authorized by the permit has been installed and after all portions thereof which are to be covered or concealed are so concealed and before any fixtures, appliances, or shutoff valves ~~has~~ have been attached thereto and after the completed system is ready to be put into service. This inspection shall include an air, CO_2 or nitrogen pressure test, ~~at which time the gas piping shall stand a pressure of not less than ten (10) pounds per square inch (68.9 kPa) gauge pressure, or at the discretion of the Administrative Authority, the piping and valves may be tested~~ at a pressure of at least six (6) inches (152 mm) of mercury, measured with a manometer or slope gauge~~. Test pressures shall be held for a length of time satisfactory to the Administrative Authority, but in no case~~ for a period of time not less than fifteen (15) minutes, with no perceptible drop in pressure. ~~For welded piping, and for piping carrying gas at pressures in excess of fourteen (14) inches (356 mm) water column pressure, the test pressure shall not be less than sixty (60) pounds per square inch (413.4 kPa) and shall be continued for a length of time satisfactory to the Administrative Authority, but in no case for less than thirty (30) minutes. These tests shall be made using air, CO2, or nitrogen pressure only and shall be made in the presence of the Administrative Authority. All necessary apparatus for conducting tests shall be furnished by the permit holder. Test gauges used in conducting tests shall comply with Section 319.0, Test Gauges~~. The test pressure shall not be less than twice the pressure that the system will be subjected to when in service. These tests shall be made in the presence of an inspector. All necessary apparatus for conducting tests shall be furnished by the permit holder. A final inspection shall be required for all gas systems that require a permit as specified in Section 1201.1. For annual gas tests and GTO's, the tests shall be done at the pressure required for the final gas inspection.

Exception: In lieu of the mercury gauge one of the following may be used:

(1) Low Pressure Systems–A low pressure diaphragm gauge with a minimum dial size of 3 ½ inches with a set hand and a pressure range not to exceed six (6) psi with 1/10 pound incrementation. The minimum test pressure shall not be less than three (3) psi and the maximum test pressure to be applied shall not exceed four (4) psi.

(2) Medium Pressure Systems–A diaphragm type pressure gauge with a minimum dial size of 3 ½ inches with a set hand and a pressure range not to exceed twenty (20) psi with 2/10 pound incrementation. The minimum test pressure shall not be less than ten (10) psi and the maximum test pressure shall not exceed twelve (12) psi.

(3) High Pressure Systems–Gauges for high pressure tests shall be as follows:

A. Required pressure tests exceeding ten (10) pounds (69 kPa) but less than one hundred (100) pounds (689 kPa) shall be performed with gauges that have one (1) pound (6.9 kPa) incrementation or less.

B. Required pressure tests exceeding one hundred (100) pounds (689 kPa) shall be performed with gauges incremented for two (2) percent or less of the required test pressure.

C. Test gauges shall have a pressure range not greater than twice the test pressure applied.

1204.4 In cases where the work authorized by the permit consists of a minor installation of additional piping to piping already connected to a gas meter, the foregoing inspections may be waived at the discretion of the Administrative Authority. In this event, the Administrative Authority shall make such inspection as deemed advisable in order to be assured that the work has been performed in accordance with the intent of this Code. Small sections of piping may be soap tested in the presence of the Administrative Authority when the Administrative Authority determined that a complete test is not required to preserve life safety,

1209.6 Gas meters shall be located in ventilated spaces readily accessible for examination, reading, replacement, or necessary maintenance. Gas meters shall not be located under a show window or under interior stairways or in engine, boiler, heater, or electric meter rooms. Meters shall not be located where they will be subject to damage, excessive corrosion, or vibration. Gas meters shall be located at least three (3) feet from known sources of ignition or air intakes. Gas meters are not to be subjected to extreme temperatures or sudden temperature changes. ~~Where not prohibited by other regulation,~~ Gas meters may be located in the open under exterior stairways.

1210.1 All piping used for the installation, extension, alteration, or repair of any gas piping shall be standard weight wrought iron or steel (galvanized or black), yellow brass (containing not more than seventy-five (75) percent copper)~~, or copper tube or Types K, L or ACR~~. Approved PE pipe may be used in exterior buried piping systems.

Corrugated stainless steel tubing systems may be used for gas piping systems provided that they are tested, listed, and installed in accordance with IAS LC 1-97, American National Standard for Fuel Gas Piping Systems Using Corrugated Stainless Steel Tubing.

~~**1210.1.1** Copper alloy tubing shall not be used if the gas contains more than an average of 0.3 grains of hydrogen sulfide per 100 standard cubic feet of gas (0.7 milligrams per 100 liters).~~

1211.6 Ferrous gas piping installed underground in exterior locations shall be protected from corrosion by approved coatings or wrapping materials or by any other approved manner. All horizontal metallic piping shall have at least twelve (12) inches (305 mm) of earth cover or other equivalent protection. Plastic gas piping shall have at least eighteen (18) inches (457 mm) of earth cover or other equivalent protection. Risers, including prefabricated risers inserted with plastic pipe, shall be metallic and shall be wrapped or coated to a point at least six (6) inches (152 mm) above grade or protected in an approved manner. When a riser connects underground to plastic pipe, the underground horizontal metallic portion of the riser shall extend at least thirty

(30) inches (762 mm) before connecting to the plastic pipe by means of an approved transition fitting or adapter.

Exceptions:

(1) Listed one-piece ninety (90) degree (1.6 rad) transition fittings or risers may have less than thirty (30) inches (762 mm) of horizontal metallic piping.

(2) Individual gas lines or tubing to outside gas lights or grills may be installed a minimum of eight (8) inches deep when installed in locations not susceptible to physical damage.

1211.8 Reserved. ~~Copper tubing systems shall be identified with an appropriate label, with black letters on a yellow field, to indicate the piping system conveys fuel gas. These labels shall be permanently affixed to the tubing within one (1) foot (304.8 mm) of the penetration of a wall, floor or partition and at maximum six-foot intervals throughout the length of the tubing runs. Labels shall be located to be visible to facilitate inspection.~~

1211.9 Reserved. ~~Copper tubing systems shall be supported and protected as follows:~~

~~**1211.9.1** Copper tubing running parallel to joists shall be fastened to the center of the joist at a maximum of (six) 6 foot (1829 mm) intervals.~~

~~**1211.9.2** Copper tubing running at an angle to joists shall be installed either through holes in the joists that are at least 1-1/2 times the outside diameter of the tubing or fastened to and supported at a maximum of (six) 6 foot (1829 mm) intervals.~~

~~**1211.9.3** Copper tubing running through holes in joists that are closer than one and three quarter (1 3/4) inches (44 mm) to the exposed face of the joist shall be protected with a steel striker plate at least 0.0508-inch (16 gauge) thick.~~

~~**1211.9.4** Copper tubing running vertically through partition walls shall not be supported within the wall space, except at the floor or ceiling. Steel striker plates or steel pipe of at least 0.0508 inch (16 gauge) thick and extending a minimum of 4 inches beyond concealed penetrations of floor/ceiling plates, wall studs, fire stops, etc. shall be installed between the tubing and the finished wall.~~

1214.1 Leaks in gas piping shall be located by applying soapy water to the exterior of the piping or by other methods acceptable to the Administrative Authority.

1218.1 Medium Pressure – Pressure over fourteen (14) inches (356 mm) of water column but not to exceed ~~five (5)~~ ten (10) psig (~~34.5~~ 69 kPa). Second stage pressure – used in liquified petroleum gas systems. Pressure over fourteen (14) inches (356 mm) of water column but not to exceed twenty (20) psig (137.8 kPa).

CHAPTER 13

HEALTH CARE FACILITIES AND MEDICAL GAS AND VACUUM SYSTEMS

1309.1 The provisions herein shall apply to the installation, testing, and verification of medical gas and vacuum piping for safe use in patient care hospitals, clinics, dental facilities, and other health care facilities.

1311.5 Piping and installation procedures shall comply with NFPA 99C, latest edition, as adopted by the Texas Department of Health.

CHAPTER 15

FIRESTOP PROTECTION FOR DWV AND STORMWATER APPLICATIONS

1507.0 Reserved ~~Model Code References~~

~~**1507.1 ICBO Uniform Building Code (1997 edition)**, Chapters 5 and 6 for heights and areas and occupancies, Chapter 7 for fire resistance ratings and firestop systems.~~

~~**1507.2 BOCA National Building Code (1999 edition)**, Chapters 5 and 6 for heights and areas and occupancies, Chapter 7 for fire resistance ratings and firestop systems.~~

~~**1507.3 SBCCI Standard Building Code (1997 edition)**, Chapters 5 and 6 for heights and areas and occupancies, Chapter 7 for fire resistance ratings and firestop systems.~~

~~**1507.4 NFPA 101, Life Safety Code (1997 edition)**, Chapter 6 for fire resistance ratings and firestop systems.~~

~~**1508.5.2 Internal Examination.** With contractor present and prepared to make repairs, the contractor shall be directed to cut into the firestop sufficiently to reveal the type and backing materials and the type and amount of the material. The contractor shall repair the firestop and the Administrative Authority having jurisdiction shall re-examine the installation.~~

~~**1508.5.3** The Administrative Authority having jurisdiction after examining the firestop, both externally and internally, shall compare the values with the design submitted. The Administrative Authority having jurisdiction will verify that all values fall within the design parameters of the tested or engineered system submitted and approved.~~

~~**1508.5.4** The Administrative Authority having jurisdiction shall continue inspection approving or rejecting applications as required. If sufficient non-compliant installations are found, the entire project may need to be redone. Re-examination after corrections shall be made.~~

APPENDIX H

~~RECOMMENDED~~ PROCEDURES FOR DESIGN, CONSTRUCTION AND INSTALLATION OF COMMERCIAL ~~KITCHEN GREASE~~ INTERCEPTORS

H 101.0 General

The provisions of this appendix shall apply to the design, construction, installation, and testing of commercial ~~kitchen grease~~ interceptors.

H 105.2.2 Grease interceptors shall have two (2) compartments. The inlet compartment shall be two thirds (2/3) of the total capacity of the interceptor, shall have a minimum liquid volume of three hundred thirty three (333) gallons (1260 L) and in all cases shall be longer than the maximum inside width of the interceptor. The outlet compartment shall have a minimum capacity of one-third (1/3) of the total interceptor capacity. The liquid depth shall not be less than two feet six inches (2' 6") (362 mm) ~~nor more than six feet (6') (1829 mm~~).

H 105.2.3 Reserved. ~~All grease interceptors shall have at least one (1) square foot (0.09 m²) of surface area for every forty-five (45) gallons (170 L) of liquid capacity.~~

H 105.2.4 Access to each grease interceptor shall be provided by a manhole over the inlet and a manhole over the outlet. There shall also be an access manhole for each ten (10) feet (3048 mm) of length for interceptors over twenty (20) feet (6096 mm) long. Each such access opening shall have a leak-resistant closure (i.e., lid) that cannot slide, rotate or flip, exposing the opening when properly installed and which does not require the use of mechanical fasteners.

Note: The intention is that a child-resistant lid be provided. Mechanical fasteners are recommended to augment the safety of and ensure positive closure of the lid.

Manholes shall extend to grade, have a minimum size of ~~20~~ 24" (~~508~~ 609.6 mm) diameter ~~or 20" x 20" square (508 mm x 508 mm~~), and if located indoors, shall have a gasketed cover at grade.

H 106.2.1 Large Food Servers. When the total number of meals exceeds 1500 per day, and an approved manufactured grease trap is installed according to manufacturer's recommendations, the following formula may be used to size the grease-holding capacity of the trap. The number of meals multiplied by 6.5 ounces, divided by 16, equals the number of pounds of retention required for a seven day period. If the sanitary rinse from the dishwasher goes to the grease trap, increase the number of pounds by 10 percent. To increase the retention time to 14 days, multiply by two.

Drawing LT-1

Drawing LT-2

Drawing LT-3

Drawing MT-1